Important Short Questions

Unit #1:

1. Define organic and inorganic chemistry.
2. Define Biochemistry. What is the scope of bio chemistry?
3. Differentiate between physical and nuclear chemistry.
4. Define industrial and analytical chemistry.
5. Define environmental chemistry.
6. Define matter with examples.
7. Define valency with example.
8. Differentiate between mixture and compound with examples.
9. Differentiate between physical and chemical properties examples.
10. Differentiate between homogeneous and heterogeneous mixture with examples.
11. Define empirical and molecular formula with example.
12. Write four example of mixture.
13. Define molecular formula and give example.
14. Which gases are present in air? Write their names.
15. Define molecule with examples.
16. Write the types of molecules and give examples.
17. Define molecular ion with example.
18. Define ion. What are its types?
19. Differentiate between gram atomic mss and gram molecular mass.
20. Define mole and give example.
21. Define Avogadro's number.
22. Describe the number of molecules in 9 g water.
23. Define atomic number and mass number.

Unit # 2:

1. What is the nature of charge on cathode rays?
2. Write any 2/4 characteristic of cathode rays?
3. Describe 2 characteristics of canal rays.
4. Write short note on Neutron.
5. Write properties of Neutron.
6. Differentiate between Rutherford's and Bohr's atomic theory.
7. An Element has 5 electrons in M shell. Finds its atomic number.
8. Write down the observations made by Rutherford.

9. Write down the defects of Rutherford's modal.
10. What is plum pudding theory?
11. Differentiate between shell and sub-shell and give example.
12. Write down the electronic configuration of following:
    Na Al B Mg Neon
13. Write down the electronic configuration of following:
    Cl N O S P Na
14. How many maximum electrons can be present in K, L, M and N shell?
15. Define isotopes. Name the isotopes of Hydrogen.
16. Write the isotopes of carbon, Chlorine and uranium with diagram.
17. For what purpose is U-235 used?
18. A patient has goiter. How it is diagnosis?
19. Define nuclear fission reaction.
20. Define the term carbon dating.

Unit # 3:

1. Explain Dobereiner's Triads.
2. Define Mendleev's periodic law.
3. Differentiate between group and period.
4. Define Mosely period law.
5. Why noble gases are not reactive?
6. Name the elements of 1st period of periodic table.
7. Name the elements of 1st group of periodic table.
8. Define Newlands octaves law.
9. What is modern periodic law?
10. Write any 2/4 properties of the long form periodic table?
11. Define electro negativity. Write electro negativity of nitrogen, oxygen and fluorine.
12. Define ionization energy. What is the trend of ionization energy in the period and group?
13. Define electron affinity and write the trend in periodic table?
14. Define shielding effect.
15. What is meant by atomic size? Write its unit.

Unit # 4:

1. Define chemical bond and write the names of its types.
2. Why do atoms react with each other?

3. What is meant by Octate rule?
4. What is meant by duplet rule?
5. Why noble gases are not reactive?
6. Why does sodium form a chemical bond with chlorine?
7. Differentiate between Ionic and Covalent bond.
8. Define polar covalent bond. Give one example.
9. Define intermolecular force and give example.
10. Define Hydrogen bonding and give example.
11. Why metals are good conductor of electricity?
12. Ice floats on the surface of water. OR Why ice is lighter than water?
13. Why water has polar covalent bond?
14. Differentiate between polar and non polar covalent bond.
15. Differentiate between lone pair and bond pair of electrons.
16. Write specific properties of ionic compounds.

Unit # 5:

1. What is diffusion? Explain with example.
2. Define effusion. Give an example.
3. Why the rate of diffusion of gases is rapid than that of liquids?
4. Define standard atmosphere pressure and write its units.
5. Define pressure and write its unit.
6. Why volumes of a gas decrease with increase of pressure?
7. Define Boyle's law. Write its equation.
8. Define Charles law. Write its equation.
9. In which unit body temperature is measured?
10. What is absolute temperature? Write its value.
11. Why is the boiling point of water higher than alcohol?
12. Define Evaporation and give an example.
13. Define melting point.
14. Define boiling point.
15. What is meant by condensation?
16. What is vapour pressure?
17. Why does evaporation cause cooling?
18. Write two properties of crystalline solids.
19. Define crystalline solids and give examples.
20. Define Transition Temperature. Give example.
21. Define amorphous solids.
22. Define allotropy. State allotropes of oxygen.

Unit # 6:

1. Differentiate between Solute and Solvent.
2. Define solution with example.
3. Define Aqeous solution with example.
4. How molar solutions are is prepared?
5. Differentiate between concentrated and dilute solution.
6. Define saturated solution.
7. Define unsaturated solution.
8. Define super saturated solution.
9. What is solid-liquid solution? Explain with example.
10. What is Solid-Solid solution? Give two examples.
11. Define molarity and write its equation.
12. How much amount of KOH required to from 1 molar solution?
13. Define solubility.
14. Explain the effect of temperature on solubility.
15. What is mean by ‘Like dissolve like? Explain with example.
16. Why test tube becomes cold when KNO_3 is dissolved in water?
17. What is meant by colloids? Give two examples.
18. Why we stir paints thoroughly before use?
19. What is meant by true solution?
20. What is meant by Tyndall effect? On what factors it depends?
21. Why do suspensions not form the homogeneous mixture?

Unit # 7:

1. Define Electrochemistry.
2. Define oxidation reaction and give example.
3. Define reduction reaction and give example.
4. What are spontaneous and non spontaneous reactions?
5. Define oxidation in term of electrons and give an example.
6. Define reduction in term of electrons and give an example.
7. What is difference between Valency and Oxidation state?
8. Calculate the oxidation number of chlorine in $KClO_3$.
9. Calculate the oxidation number of Sulphur (S) in H_2SO_4.
10. Calculate the oxidation number of Nitrogen in HNO_3.
11. Calculate the oxidation number of Mn in $KMnO_4$.
12. Define oxidation number with example.

13. Define oxidation and reducing agent with examples.
14. Define redox reaction. Give an example.
15. Define electrolyte. Give an example.
16. What are non electrolytes? Give one example.
17. What are weak electrolytes? Give two examples.
18. What are strong electrolytes? Give two examples.
19. What are neutral electrolytes? Give two examples.
20. What are anode and cathode?
21. Define electrochemical cell. What are its types?
22. What are electrolytic cells?
23. What is Galvanic cell? Give an example.
24. Where do the electrons flow from Zn electrode in Daniel's cell?
25. Write difference between Electrolytic Cell and Galvanic cell.
26. Define electrolysis and give example.
27. What types of reaction take place at anode in electrolytic cell?
28. What is salt bridge?
29. What is Pacemaker?
30. What are by-products produced in Nelson cell?
31. Define Brine.
32. In electroplating of silver from where Ag^{+} comes and where it deposited?
33. How electroplating of tin on steel is carried out?
34. What is meant by Electroplating?
35. How electroplating of Zinc in carried out?
36. Define corrosion.
37. What is meant by Rusting of iron?
38. Which salt is used as electrolyte in chromium electroplating?
39. Why O2 is necessary for rusting?
40. Define Alloy and give example.
41. What is Galvanizing?

Unit # 8:

1. Metals are good conductor of electricity. Why?
2. Write any two uses of Sodium.
3. Write two uses of Calcium.
4. What is Electropositivity? Explain with example.
5. Write four physical properties of metals.
6. Why is HF a weak acid?
7. Write down two important chemical properties of metals.

8. Which metals are the most malleable and ductile?
9. What are metalloids? Give two Examples.
10. Which is most precious metal?
11. Write uses of Silver.
12. Write uses of Magnesium.
13. Why Sodium Metal is more reactive than magnesium?
14. What is meant by malleable and ductile?
15. Define Halogens. Give example.
16. Why is ionization energy of Na more than K?
17. Why is ionization energy of Na less than Mg?
18. Why is calcium more electropositive than magnesium?
19. Why is magnesium harder than sodium?
20. Which metal is used for metal work?
21. Why silver and gold be used for making electrical wires?

Important Long Questions

Unit # 1:

1. State any four differences between compound and mixture.
2. How a chemical formula is written? Explain.
3. What is Avogadro 's number? How it relates with Mole?

Unit # 2:

1. Write down the properties of cathode rays.
2. Write the properties of canal rays.
3. Describe Rutherford's Atomic model. Also write defects in Rutherford's Model.
4. Write the results of experiments of Rutherford's Atomic Model.
5. Write the postulates of Bohr's atomic Model.
6. Define Isotopes. Write the uses of isotopes.

Unit # 3:

1. Write down three salient features of long form of periodic table.

Unit # 4:

1. Define Ionic Bond. Explain it with examples.
2. Define covalent Bond. What are its types?
3. How a coordinate covalent bond is formed.
4. Describe the properties of Ionic Compound.

Unit # 5:

1. Describe Boyle's law and verify it with experiment.
2. Describe Charles law and verify it with experiment.
3. Define Evaporation. Explain the factors of affecting the Evaporation.
4. Differentiate between Amorphous solid and crystalline solid.

Unit # 6:

1. What are the effects of temperature on solubility?
2. How solute solvent interaction affect the solubility.
3. Write the properties of colloid and suspension.
4. When 20 g of NaCl is present in 40 cm^3 of solution. What will be its molarity.
5. We want to prepare 100 cm^3 0.4 M of $MgCl_2$. How much $MgCl_2$ is required?
6. Give the general Principal of Solubility.

Unit # 7:

1. Describe the rules for assigning the oxidation number.
2. Write a note on electrolysis of water.
3. State the work and construction of Daniel cell.
4. State the work and construction of Nelson's cell.
5. Give comparison of electrolytic and Galvanic cell.
6. What is electroplating? Write down the procedure of electroplating.
7. How electrolytic reefing of copper is carried out?
8. What do you know about rusting of Iron.
9. Write three methods of prevention of corrosion.

Unit # 8:

1. Write down any four uses of magnesium.
2. Compare and contrast the properties of Alkali and Alkaline Earth Metals.
3. Write the reaction of Sodium with Cl_2, O_2, H_2O and H_2.
4. Write the chemical properties of metals and non metals.